



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Adress: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| | | | | |
|--|---------------|----------------------|---------------------|------------------|
| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/571,280 | 03/09/2006 | Osafumi Moriya | 289515473 | 6058 |
| 53/067 | 7590 | 05/14/2009 | EXAMINER | |
| STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVE., NW WASHINGTON, DC 20036 | | | VILLECCO, JOHN M | |
| ART UNIT | PAPER NUMBER | | | |
| | 2622 | | | |
| MAIL DATE | DELIVERY MODE | | | |
| 05/14/2009 | PAPER | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|--------------------------------------|--------------------------------------|
| Office Action Summary | Application No. 10/571,280 | Applicant(s) MORIYA ET AL. |
| | Examiner JOHN M. VILLECCO | Art Unit 2622 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 February 2009.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-3 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 09 March 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1668) Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed February 18, 2009 have been fully considered but they are not persuasive. More specifically applicant has argued that the combination of Yamazaki, Kondo and Kawahara fails to specifically disclose changing the shutter speed for every period of a multiple of two fields. The Examiner respectfully disagrees.

2. Firstly, Kondo discloses that in a low speed image capture, the length of period is changed (from 1/60 to 1/15 of a second) for every period of a multiple of two fields (in this case, 4 fields). See Figure 2 and column 1, lines 48-65. Therefore, when in the second image-taking mode (the low speed image capture) the period of the electronic shutter function is changed from 1/60th of a second to 1/15th of a second. Thus, Kondo can broadly be interpreted to meet the limitation of changing "a length of period of said electronic shutter function for every period of a multiple of two fields" in the second image taking mode.

3. Additionally, Yamazaki was used to show that it is well known in the art change the exposure time in a low speed image capture operation. As shown in Figures 10 and 11 and discussed in column 11, lines 19-43, Yamazaki discloses the ability to change the exposure time in a low speed image capture operation in which more than one field period is used. Thus, it is submitted that Yamazaki discloses the claimed "continuously changing an electronic shutter-ON time in accordance with the period".

4. Finally, Kawahara was used to show that it is well known in the art to compare the brightness of an image signal to a reference value to determine an optimal exposure value.

5. For the reasons stated above, the rejections from the previous office action will be repeated.

Specification

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Image Processing Device with Continuous Exposure Adjustment in a High-Sensitivity Image-Taking Mode.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (U.S. Patent No. 5,541,650) in view of Yamazaki et al. (U.S. Patent No. 5,604,537) and further in view of Kawahara et al. (U.S. Patent No. 5,428,421).**

9. Regarding *claim 1*, Kondo discloses a video camera with a low speed shutter mode and automatic gain and iris control. More specifically and as it relates to the applicant's claims, Kondo discloses an image processing device (video camera) with a first image taking mode (high speed shutter mode) used in a bright environment and a second image taking mode (low speed shutter mode) used in a dark environment comprising a lens unit (lens, 1), an iris (within the

lens; col. 3, lines 31-33) which adjusts a light quantity which has entered the lens unit (lens, 1); an imaging element (CCD, 2) having an electronic shutter function of outputting the optical image of the object for which the light quantity from said iris is adjusted as an image signal (col. 1, lines 43-60); an AGC amplifier (AGC circuit, 4) which amplifies an image/video signal from the imaging element (CCD, 2) and can adjust an amplification gain thereof (col. 3, lines 13-14 and col. 3, line 65—col. 4, line 2); signal processing means (signal processor, 6) for obtaining a video signal by subjecting the image signal amplified by the AGC (4) to signal processing (col. 3, lines 16-19); comparison means (comparator, 21) for comparing the brightness level of the of the video signal indicating the brightness of the object with a predetermined reference brightness level (REF); and an imaging control means (controller, 14) which controls the exposure of the camera based on the comparison of the image level to the reference value (col. 3, line 42 to column 4, line 15).

Additionally, Kondo discloses changing the length of a period of the electronic shutter function for every period of a multiple of two fields (See Figure 2, where in the low speed image capture, one field is output for every four fields) and that the shutter speed is changed (from 1/60th of a second to 1/15th of a second) in accordance with the period. However, he does not specifically disclose an imaging control means or that imaging control means holds an electronic shutter-ON time at a time point at which the output of the comparison means at which the brightness signal level matches the reference brightness signal level becomes zero. Yamazaki, on the other hand, discloses a camera for capturing images under low illumination which captures the optimal image by varying the iris, gain, and shutter speed of the camera. More specifically, Yamazaki discloses a camera including a lens (1), iris (2), CCD (3), AGC amplifier

(5), signal processing means (6), and an imaging control means (system control circuit, 17). As shown in Figures 10 and 11 and discussed in column 11, lines 19-43, Yamazaki discloses the ability to change the exposure time in a low speed image capture operation in which more than one field period is used. Yamazaki discloses that by adjusting the shutter speed along with the gain and the iris when capturing an image under low illumination, the S/N level deteriorates along with the image. See column 4, lines 20-27. Additionally, in column 11, lines 35-42, Yakazaki discloses that the ability to adjust the exposure time in a long time exposure results in a fine exposure adjustment operation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the camera of Kondo to also vary the shutter speed in order to form a higher quality image with reduced noise.

Furthermore, although Kondo discloses comparing the level of the image signal to a reference and outputting the difference to control exposure and Yamazaki discloses keeping the level of the signal within a predetermined range (col. 12, lines 6-7) and an AE reference value which indicates a target reference value so that the image signals become constant (col. 13, lines 4-6), neither of the aforementioned reference specifically discloses making the difference between the signal level and the reference value equal to zero. Kawahara, on the other hand, discloses that it is well known in the art to make the difference between an image signal level and a reference value equal to zero in order to find the optimal exposure value. See column 25, line 60 to column 26, line 3. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the difference between the image signal level and the reference value in Kondo equal to zero in order to find the optimal exposure.

Art Unit: 2622

10. As for *claim 2*, Kondo discloses adjusting the iris to an optimal level and holding it there when the image signal level is compared to a reference value. See column 3, line 43 to column 4, line 15. As mentioned above in the discussion of claim 1, Kawahara discloses making the difference signal zero to find the optimal exposure.

11. With regard to *claim 3*, Kondo discloses adjusting the gain to an optimal level and holding it there when the image signal level is compared to a reference value. See column 3, line 43 to column 4, line 15. As mentioned above in the discussion of claim 1, Kawahara discloses making the difference signal zero to find the optimal exposure.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN M. VILLECCO whose telephone number is (571)272-7319. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHN M. VILLECCO/
Primary Examiner, Art Unit 2622
May 12, 2009